

Date: Mon, 3 Jan 94 04:30:36 PST
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>
Errors-To: Ham-Space-Errors@UCSD.Edu
Reply-To: Ham-Space@UCSD.Edu
Precedence: Bulk
Subject: Ham-Space Digest V93 #130
To: Ham-Space

Today's Topics:

ANS Bulletin 001.01
ANS Bulletin 001.02
TrakBox panel layout

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: Sun, 2 Jan 1994 14:02:34 -0700
From: library.ucla.edu!news.mic.ucla.edu!unixg.ubc.ca!nntp.cs.ubc.ca!alberta!
nebulaus!ve6mgs!usenet@network.ucsd.edu
Subject: ANS Bulletin 001.01
To: ham-space@ucsd.edu

SB AMSAT @ WW \$ANS-001.01
HR AMSAT NEWS SERVICE BULLETIN 001.01 FROM AMSAT HQ
SILVER SPRING, MD January 1, 1994
TO ALL RADIO AMATEURS BT
BID: \$ANS-001.01

A number of messages have recently been posted to the AMSAT BBS concerning the schedules for the various satellites and how they are arrived at. In the case of OSCAR-13, the schedule is determined by the A0-13 Command Team consisting of James Miller G3RUH, Peter Guelzow DB2OS and Graham Ratcliff VK5AGR. As to how these volunteers determine the schedule, a very fine set of comments was posted by Paul Beckmann WA0RSE Internet address wa0rse@amsat.org. The AMSAT News Service thanks Paul for his well-

put comments and has taken the liberty of extracting them for this bulletin.

Paul begins by asking himself: What determines the mode schedule for a satellite? He says that he found an answer in the very clearly written piece in the 1993 Space Symposium Proceedings by, you guessed it, James, G3RUH.

In his attempt to put the article by James in terms that may not be obvious to new to satellites as well as many not so new "bird-watchers", Paul offers a list of some of the important considerations:

1. All modern satellites are battery-powered with solar cell recharging systems. In order to work, the batteries must stay charged.
2. Most satellites do not have solar cells covering their entire surface. This means the attitude of the satellite with relation to the sun must be managed to keep the batteries charged.
3. The antennas are fixed to the satellite, not steerable, and necessarily "go along for the ride" when accomplishing Item 2.)
4. Each mode involves a receiver, a transmitter, and a pair of antennas. The receivers vary in sensitivity, the transmitters in power, and the antennas in gain and beamwidth.
5. Because of Item 3, the characteristics of item 4 allow transponder operation only in particular modes, when the distances and spacecraft attitudes are within certain limits. For example, a narrowbeam antenna pointing away from the Earth will not support communications. If a particular mode requires the use of that antenna, it would not do any good to place the satellite in that mode, no matter how badly it was desired. To change the attitude of the spacecraft to point the antenna at the Earth could very well compromise solar cell illumination, hence battery charge, hence spacecraft operation - and possibly even its life expectancy.
6. Because some modes draw more power than others, the battery power must be budgeted. This also constrains how long the satellite can operate in any particular mode.

Paul admits to possibly missing some other major points, but he believes that these demonstrate to him, at least, that the mode schedule on A0-13, or any other bird, is not a self-serving decision made by some "elite superclass" who treat the bird as a "toy", but are considered decisions, constrained by the physics of

the orbit, solar cells, batteries, equipment aboard, antennas, etc., designed to offer the best long-term schedule of transponder operation and to further the state-of-the-art for the next birds' designs.

WAORSE strongly suggests reading the article by James in the Proceedings. He says that he was amazed at the number of specialized programs that had been written, complete with graphical output, to aid in the decision-making process to keep the A0-13 satellite operational. He expressed his opinion that James, and others like him, should be thanked for bringing clear explanations like these to the rest of us and for fostering experimentation in modes that have proven to provide better two-way satellite communications for our fellow hams across the globe.

Paul sums up his message by saying that we need everyone interested in AMSAT, with their opinions, tempers, passions, talents, and good humor. He also wishes all a Happy New Year. Peace on Earth. Good will toward all.

Information on ordering a copy of the Space Symposium Proceedings, which contains James Miller's article can be found on page 12 of the Nov/Dec AMSAT Journal.

/EX

Date: Sat, 1 Jan 1994 16:38:22 -0700
From: yeshua.marcam.com!zip.eecs.umich.edu!destroyer!nntp.cs.ubc.ca!alberta!
nebulus!ve6mgs!usenet@uunet.uu.net
Subject: ANS Bulletin 001.02
To: ham-space@ucsd.edu

SB ALL @ AMSAT \$ANS-001.02
HR AMSAT NEWS SERVICE BULLETIN 001.02 FROM AMSAT HQ
SILVER SPRING, MD January 1, 1994
TO ALL RADIO AMATEURS BT
BID: \$ANS-001.02

RV3DR, QSL manager for MIR contacts, advises that on December 24, 1993, December 31, 1993 and January 6, 1994 the MIR space station will be transmitting special digitized voice messages on its normal frequency of 145.55 MHz. The message repeats every tow minutes. Sergey says that the developer of this equipment is DL2MDE.

ANS thanks RV3DR for the information that went into this bulletin

and James Mollica N2NRD for relaying it to us.

/EX

Date: Mon, 3 Jan 1994 04:51:53 GMT
From: netcomsv!netcom.com!fmitch@decwrl.dec.com
Subject: TrakBox panel layout
To: ham-space@ucsd.edu

this is a generic reply to all email in response to my trakbox panel layout post to the usenet and i am also posting this msg on compuserve...

the panel layout is enclosure specific for the Bud LB-1663 Contempo box... this box is a 'ten-tec' type box, gray in color with black plastic side panels, with the following dimensions:

3 1/4" high
7 1/32" wide
7 3/16" deep

the box is a mite too small for the pcb to fit into the pcb grooves molded in the plastic side panels, therefore you have to *trim* the printed circuit board by about 3/16 ths of an inch... this is easily done with a hand file... it is *much* easier to do if you haven't populated the board... if you don't want to trim your pcb you can still use the layout as an example of "how to do it"...

the current layout is for the switches furnished with the first batch of kits... the second batch of kits is currently being 'kitted'... the satellite selector switch for the second batch of kits will be a thumbwheel type... i am being loaned one of the new type switches and will modify the panel layout to accomodate either switch...

i will be posting the corel draw file and also a gif file to compuserve as soon as we have the layout modified for the new type selector switch... (if anyone needs a different file type please let me know... i can furnish any file type supported as an export file from corel draw 3) ... look for a file named tboxpanl.zip or something similar... a warning on the gif file --- it loses much detail, and is only useful for you to grab a quick peek at the layout...

i am looking for a ftp site to upload the files for internet access, any suggestions for a public accessable location will be appreciated...

if you need the files directly, you can download the zip file from my data line, see below, or send me a blank, *formatted* disk of any

flavor, along with return postage... i will dump the files on your disk and mail them back to you...

thanks,
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End of Ham-Space Digest V93 #130

